

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 December 2003 (31.12.2003)

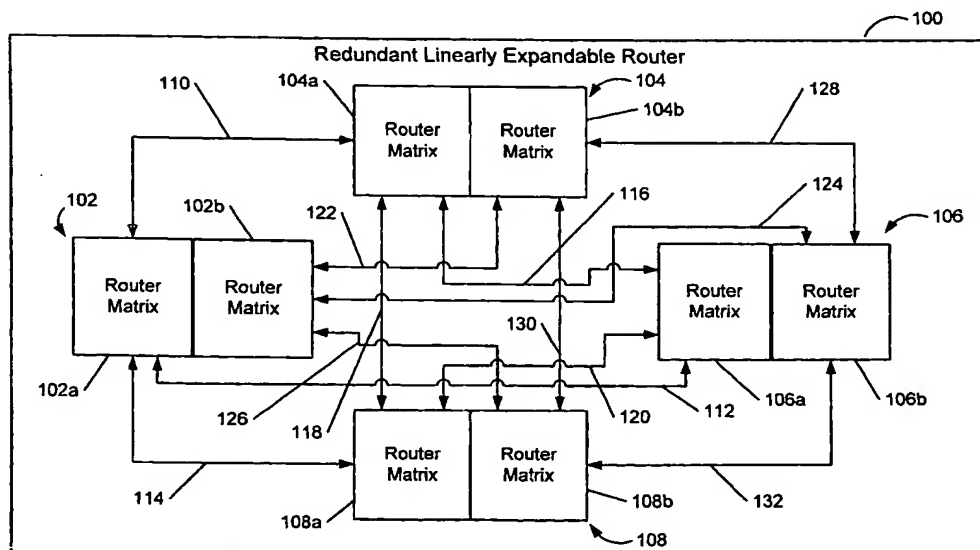
PCT

(10) International Publication Number
WO 2004/001976 A2

- (51) International Patent Classification⁷: **H03M**
- (21) International Application Number:
PCT/US2003/019154
- (22) International Filing Date: 17 June 2003 (17.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/390,842 21 June 2002 (21.06.2002) US
- (71) Applicant (for all designated States except US): **THOMSON LICENSING S.A.** [FR/FR]; 46, Quai A. Le Gallo, F-F-92648 Boulogne (FR).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **CHRISTENSEN, Carl** [US/US]; 2360 Bridle Oak Drive, South Jordan, UT 84095 (US).
- (74) Agents: **TRIPOLI, Joseph, S.** et al.; c/o Thomson Licensing Inc., 2 Independence Way, Suite 200, Princeton, NJ 08540 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: METHOD OF FORWARD ERROR CORRECTION



(57) Abstract: An iterative method of correcting errors in a data block (164). Bad bytes are first identified using information derived from an 8B/10 encoding/decoding of the data block (164). Within each identified bad byte, suspect bits are subsequently identified using information derived from parity encoding of a row of the data block (164) in which the bad byte is located. Each suspect bit is then classified as either a confirmed error bit or as an unconfirmed error bit using information derived from parity encoding of a column of the data block (164) in which the suspect bit is located. Confirmed error bits are then corrected, the parity bits corresponding to the confirmed error bit reset, and the bad byte cleared. The process is then repeated if one or more bad byte remain in the data block (164).